1,082,284

PATENT SPECIFICATION

NO DRAWINGS

1,082,284

Date of Application and filing Complete Specification: Jan. 13, 1965.
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Int. Cl.: —A 23 I 1/26//A 23 h

COMPLETE SPECIFICATION

Caramel-containing Emulsified Edible Oil Compositions and Process for their preparation

I, CLAUDE GORTATOWSKY, a citizen of the United States of America, of 2772 Normandy Drive, N.W. Atlanta 5, State of Georgia,

ERRATA

SPECIFICATION No. 1,082,284

Page 1, line 54, *for* "dipersed" *read* "dispersed"

Page 2, line 42, *for* "thickners" *read* "thickeners"

Page 3, line 76, *after* "substantially" *delete* hyphen and *insert* "y"

THE PATENT OFFICE
11th March 1968

acid and a sufficient amount of a sugar/water mixture to form the soft drink syrup. When one part syrup is then added to about 5 parts water, for example, a soft drink is produced. To insure uniform flavor and odor to the syrup and to the soft drink made therefrom, it is important that the essential oils be uniformly distributed therethrough, and that such a distribution remain stable over a period of time. Since essential oils are, as a rule, insoluble in water, it has been the practice to first emulsify the oils in an aqueous medium by adding thereto an emulsifying agent, such as a vegetable gum, namely gum acacia, gum tragacanth, gum karaya, gum larch, and the like, together with one or more thickening agents which increase the viscosity of the resulting mixture. The emulsified mixture is referred to as a soft drink base. Once the essential oils have been uniformly emulsified,

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items well known to those skilled in the art, including higher costs, less efficient emulsification, instability, and the imparting of off-taste or flavor to the beverage.

In most soft drinks which are made and sold nationally and also throughout the world, it is the mixture of the particular essential oils which imparts the desired taste to the final soft drink products and which enables persons to distinguish one drink, for example, from another. Thus, no matter in which section of the country or world one purchases the drink, the flavor and taste are always the same. To insure the sameness in taste and flavor, the soft drink manufacturer can either make and ship the soft drink syrup to his bottlers, or, more economically, need only make and ship

[*Price 4s. 6d.*]

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Caramel-containing Emulsified Edible Oil Compositions and Process for their preparation

I, CLAUDE GORTATOWSKY, a citizen of the United States of America, of 2772 Normandy Drive, N.W. Atlanta 5, State of Georgia, United States of America, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement: —

This invention relates to an improved process for making soft drink syrups. More particularly, this invention relates to emulsified essential oil compositions and the process for making same wherein the oils are completely and uniformly emulsified and dispersed throughout the compositions, which compositions, in turn, are useful for making syrups for soft drinks. Broadly speaking, this invention also relates to emulsified edible oil compositions and processes for forming same.

In making soft drink syrups, a soft drink base comprising a mixture of several essential oils is added to a soft drink flavor composition containing flavorings and colorants, and to the resulting mixture is added phosphoric acid and a sufficient amount of a sugar/water mixture to form the soft drink syrup. When one part syrup is then added to about 5 parts water, for example, a soft drink is produced. To insure uniform flavor and odor to the syrup and to the soft drink made therefrom, it is important that the essential oils be uniformly distributed therethrough, and that such a distribution remain stable over a period of time. Since essential oils are, as a rule, insoluble in water, it has been the practice to first emulsify the oils in an aqueous medium by adding thereto an emulsifying agent, such as a vegetable gum, namely gum acacia, gum tragacanth, gum karaya, gum larch, and the like, together with one or more thickening agents which increase the viscosity of the resulting mixture. The emulsified mixture is referred to as a soft drink base. Once the essential oils have been uniformly emulsified, the emulsified composition, or soft drink base, is added to the soft drink flavor composition, which includes ingredients such as water, flavorings, colorants, and the like, and is uniformly dispersed therein. Upon addition of phosphoric acid and a water-sugar mixture, while stirring, the soft drink syrup is formed and the essential oils are completely and uniformly dipersed therethrough.

While emulsification of the essential oils is necessary, known emulsification practices where gums are used as emulsifying agents for the oils have not been completely satisfactory, since the gum material occasionally precipitates and deposits of the gum may form on the interior of the soft drink bottles which deleteriously affect the appearance and acceptability of the product. Furthermore, while certain alcohols may and have been used as solubilizing agents for certain essential oils and keep such oils dispersed in the soft drink syrup, the use of these agents presents problems well known to those skilled in the art, including higher costs, less efficient emulsification, instability, and the imparting of off-taste or flavor to the beverage.

In most soft drinks which are made and sold nationally and also throughout the world, it is the mixture of the particular essential oils which imparts the desired taste to the final soft drink products and which enables persons to distinguish one drink, for example, from another. Thus, no matter in which section of the country or world one purchases the drink, the flavor and taste are always the same. To insure the sameness in taste and flavor, the soft drink manufacturer can either make and ship the soft drink syrup to his bottlers, or, more economically, need only make and ship

[*Price* 4*s.* 6*d.*]

the soft drink flavor base containing the emulsified essential oils uniformly dispersed therethrough, or the soft drink flavor composition containing, together with the flavor base, the additional flavoring and colorant ingredients. From the soft drink flavor composition the syrup can readily be made and, in turn, the soft drinks made therefrom.

While the emulsifying agents and thickeners in the aqueous soft drink base often account for at least about 30%, and usually about 33-1/3% to 40% by weight of the total ingredients of the soft drink base, these ingredients, aside from their principal function of maintaining the essential oils in uniform dispersion and giving body to the base, do not substantially contribute to the ultimate flavor or taste of the soft drink syrup or soft drinks made therefrom. The presence of such emulsifying agents and thickeners in such large amounts represents a considerable cost factor, particularly when shipments of the soft drink base or the soft drink flavor containing the base are made over great distances.

It would be extremely desirable to eliminate the presence of the large amounts of emulsifying agents and thickeners in the soft drink base, thus permitting a substantial weight reduction in the total ingredients of the soft drink base and soft drink flavor formed therewith and yielding considerable savings in the cost of shipping such bases and/or flavors to various bottling plants throughout the world. Elimination of such emulsifying agents also eliminates the aforementioned disadvantages attributable thereto.

Accordingly, it is an object of the present invention to provide a method for emulsifying essential oils in the production of soft drink bases, flavors and syrups which avoids the use of large amounts of conventional emulsifying agents, solubilizing agents, and thickners, thereby avoiding the shortcomings and disadvantages of the prior known methods and compositions.

It is a further object of the present invention to produce a method for emulsifying essential oils used in making soft drink bases, which method obviates the necessity for using conventional emulsifying agents and thickeners.

Still another object of the present invention is to provide a method for emulsifying edible oils, including vegetable oils and essential oils, while eliminating the necessity for using conventional emulsifying agents.

A further object of this invention is to provide a process for emulsifying essential oils which are to be subsequently used in the formation of soft drink syrups wherein not only is the use of known emulsifying agents for such oils obviated, but, in most instances, emulsification is obtained by using an ingredient which is ordinarily present in such syrups but for an entirely different purpose.

A further object of the invention is to provide new and useful soft drink bases, soft drink flavors, soft drink syrups and soft drinks, all of which contain a stable emulsion of one or more essential oils wherein the oils are completely and uniformly dispersed therethrough, but which emulsions do not contain any added emulsifying agents, solubilizing agents, or any ingredient not normally found in such compositions.

Still another object of this invention is to provide a caramel color-containing soft drink syrup which has all of the ingredients of known caramel color-containing soft drinks with the exception of the added emulsifying agents for the essential oils contained therein, but wherein the essential oils are completely emulsified and uniformly dispersed therein without the addition to the syrup of any further ingredient to provide such emulsification.

Another object of this invention is to provide a caramel color-containing soft drink which is identical in color and taste to a soft drink having the identical ingredients therein with the sole exception that the soft drink of the invention does not contain the added emulsifying agents for the essential oils, but the essential oils are still completely emulsified and uniformly dispersed throughout the drink.

A further object of this invention is to provide a caramel color-containing soft drink base, flavor, or syrup having essential oils completely emulsified and dispersed therethrough, wherein the previously known emulsifying agents for said oils have been omitted, together with their function, but emulsification has been achieved without the addition of any ingredient which is not normally an integral component of said base, flavor, or syrup.

Still another object of the present invention is to provide an aqueous emulsified composition comprising at least one edible oil, for example, a vegetable oil or essential oil, which oil or oils remain in the emulsified state for long periods of time and which composition is suitable for use in flavoring food products such as syrups of all kinds, including soft drink syrups, candies, condiments, cake mixes, pie fillings, sauces, beverages, and the like.

Another object of the invention is to provide a process for dispersing and emulsifying vegetable oils for use in food products where a low level of amount of vegetable oil is required.

In attaining the above objects, one feature of the present invention resides in emulsifying edible oils by use of a sufficient amount of commercially available, well-known caramel color as emulsifying agent in lieu of the known emulsifying agents or solubilizing agents previously used.

Another feature of the invention resides in forming an aqueous emulsion of edible oil or oils, such as vegetable oils, essential oils, and

the like, wherein the emulsifying agent for said oils is the color bodies present in and obtained from caramel color, and subsequently adding said emulsified composition to a food or beverage product.

A further feature of the invention resides in making a soft drink base for use in a soft drink flavor normally containing caramel color therein, by first emulsifying the essential oils of the base with all or a portion of the caramel color normally used in making the soft drink flavor, and then adding the emulsified oils to the remaining ingredients of the flavor, which in turn, is used in making the soft drink syrup.

Still a further feature of the invention resides in adding the mixture of essential oils directly to the caramel color-containing soft drink flavor composition, which composition is completely free of previously known emulsifying agents for the essential oils, and emulsifying said oils in said composition in the presence of the caramel color, and, subsequently making the soft drink syrup from said soft drink flavor composition.

Other objects, features, and advantages of the present invention will become apparent from the following detailed description.

In accordance with the present invention, the above objects and features are obtained by uniformly blending and mixing the essential oils with a sufficient amount of a commercially available caramel color for a period of time and at a mixing speed sufficient to obtain a stable emulsion of the essential oils, thereby obviating the need of conventional emulsifying agents and even of thickeners for the oils.

Caramel color is widely known and has been used as a colorant for soft drinks and foods for many years. Caramel color is essentially a pyrolysis product of sugar and may be formed from suitable carbohydrates such as sucrose, inverted sucrose, reducing sugars, hydrolysis products of starch, and the like. Various methods have been devised for the production of caramel color and are described in such Patents as British Patents 696,736; 698,105 and 809,747.

As defined by the United States Department of Health, Education and Welfare, Food and Drug Administration, in its regulations published in the Federal Register on September 14, 1963, the color additive caramel is the amorphous dark brown material resulting from the carefully controlled heat treatment of the food grade carbohydrates, such as cornstarch hydrolysates, sucrose, dextrose, invert sugar, molasses, and malt syrup. The food grade acids, alkalis and salts employed to assist caramelization include phosphoric acid, sulfuric acid, sulfurous acid, ammonium hydroxide, potassium hydroxide, sodium hydroxide, and the ammonium, sodium, and potassium salts of carbonic, phosphoric, sulfuric and sulfurous acids.

Caramel color used in the emulsification of edible oils is electronegative in character so as to make is compatible with the edible oils. This caramel color has a pH of about 2.9. Caramel color includes in its composition approximately 30 parts by weight water and 70 parts by weight caramel solids which include the color bodies. Substantially 7 to 8.5% by weight of the caramel color consists of color bodies. Thus, a single strength caramel color is one having from substantially-to 8.5% color bodies, while a double strength caramel color is one wherein the amount of color bodies is increased to substantially 13% by weight of the caramel color. The water and the solids are present in about equal amounts by weight in double strength caramel color.

By the term essential oils, as it is used in this specification, is meant that group of volatile oils of characteristic odors extracted, expressed, or distilled from plants, leaves, flowers, fruits, and the like. These essential oils are distinguished from fatty oils, in general, by their volatility, non-greasiness, and non-saponifying properties. The term essential oils includes those oils existing in plants and also those developed from plant constituents.

Essential oils of various types are employed in the soft drink field and the method of the present invention is adaptable for use with any one or more of these oils. Illustrative of essential oils are oil of lemon, oil of lime, oil of cassia, oil of nutmeg, oil of neroli, oil of orange, oil of peppermint, oil of cloves, and the like. In addition to being suitable for the emulsification of essential oils in the preparation of soft drink bases, flavors, and syrups, the methods of the present invention are suitable for emulsifying such diverse edible oils as corn oil, safflower oil, olive oil, and other vegetable and fatty oils.

To give a fuller appreciation of the contribution of the present invention to the soft drink art in particular and to the food and beverage art in general, a number of Examples are set forth herein, describing the invention and comparing it with prior art process.

A conventional process for making a soft drink in accordance with the known prior art is described in Example I, and a process of the present invention for making a soft drink identical in color, taste and flavoring, without the use of added emulsifying agents and thickeners for the essential oils, is described in Example II. Example III describes a further embodiment of the process of the present invention whereby a soft drink identical to that of Example II is also produced.

EXAMPLE I

Soft Drink Flavor Base

11 Parts by weight of a mixture of essential oils, having the following composition, were mixed with 89 parts by weight of an emulsion

base and thoroughly agitated until the oils were completely emulsified and uniformly dispersed throughout the mixture.

46.8 grams lemon oil, terpeneless, 15 fold
14.20 grams lime oil, terpeneless, 7 fold
10.65 grams oil of cassia
3.50 grams oil of nutmeg
.01 gram oil of neroli
24.84 grams oil of orange, terpeneless, 35 fold.

The aforesaid emulsion base was prepared as follows:

30.27 grams of ribbon gum tragacanth were added to 96 fluid ounces of cold water, agitated therein, and impurities removed with a strainer. The gum tragacanth was then left to soak. 15.13 Grams of powdered gum arabic were thoroughly mixed with 8.8 grams of pectin, grade No. 150, and 28 fluid ounces of boiling water were added slowly to the gum arabic and pectin mixture, while the mixture was continuously agitated. 3.68 Grams of benzoic acid were dissolved in 4 fluid ounces of boiling water, and this was then added to and mixed with the gum arabic and pectin mixture.

The mixture of ribbon gum tragacanth was agitated for approximately 1 hour until the gum tragacanth had entirely dissolved, and this was then added to the mixture of gum arabic, pectin, and benzoic acid, and agitated for half an hour, to form the emulsion base.

Soft Drink Flavor

A soft drink flavor was made as follows:

12 fluid ounces of cola nut extract were mixed with 2 fluid ounces of vanilla extract, two-fold, and the mixture was added to a solution of

10.0 fl. oz. water
16.0 fl. oz. glycerin
32.0 fl. oz. lime juice
32.0 fl. oz. caramel color, acid proof..

Soft Drink Syrup

To 3.25 fluid ounces of the above soft drink flavor were added 3 grams of the above soft drink flavor base containing .33 grams emulsified essential oils, and one-half fluid ounce phosphoric acid solution (1 part phosphoric acid U.S.P. 85 per cent and 7 parts water, by volume, into which was dissolved 1.7719 grams caffeine). A sufficient amount of 60.0 degrees Brix sugar/water syrup containing 6.44 parts by weight sugar to 4.29 parts by weight water was added to the above mixture of soft drink flavor, phosphoric acid, and soft drink flavor base to form one United States gallon of soft drink syrup.

One part by volume of this syrup was then mixed with 5.5 parts by volume of carbonated water to form a soft drink.

EXAMPLE II

Soft Drink Flavor Base

1.67 Parts by weight of the same mixture of essential oils as described in Example I were mixed with 98.33 parts by weight of caramel color containing 7—8% by weight color bodies therein. The caramel color was identical to that used in the soft drink flavor of Example I. The mixture was agitated until the oils were completely emulsified and uniformly distributed throughout the mixture.

Soft Drink Flavor

A soft drink flavor was made as follows:

12 fluid ounces of cola nut extract were mixed with 2 fluid ounces of vanilla extract, two-fold, and the mixture was added to a solution of:

10.0 fl. oz. water
16.0 fl. oz. glycerin
32.0 fl. oz. lime juice

All of the ingredients used in the above soft drink flavor were identical to those used in making the soft drink flavor of Example I.

Soft Drink Syrup

2.25 fluid ounces of the above soft drink flavor were mixed with one-half fluid ounce of phosphoric acid solution containing 1.7719 grams caffeine (same as used in Example I), and with 19.7585 grams of the above soft drink flavor base (containing .33 grams of essential oils). To this mixture were added 19.4285 grams of the same caramel color to make the total weight of caramel color in the final syrup identical to that in the syrup in Example I. To the foregoing mixture was added the 60.0 degrees Brix sugar-water syrup as described in Example I to form one gallon of the soft drink syrup.

One part by volume of syrup was added to 5.5 parts by volume of carbonated water to form a soft drink.

In comparing the soft drink of Example II with the soft drink of Example I, both drinks were identical in appearance, color, and taste.

While it is preferable to emulsify the essential oils with the caramel color to form the soft drink flavor base, and ship the emulsified base to the ultimate manufacturer of the soft drink, who incorporates the soft drink flavor base into the soft drink flavor and then proceeds to make the soft drink syrup and, therefrom, the soft drink, as described in Example II, it is, however, possible to merely add the mixture of essential oils directly to the caramel color-containing soft drink flavor and completely emulsify the oils therein, due to the presence of the caramel color, and in the complete absence of the usual emulsifying agents for the oils. This process is disclosed in the following example:

EXAMPLE III

Soft Drink Flavor

A soft drink flavor was made as follows: 12 fluid ounces of cola nut extract were mixed with 2 fluid ounces of vanilla extract, two-fold, and the mixture was added to a solution of

10.0 fl. oz. water
16.0 fl. oz. glycerin
32.0 fl. oz. lime juice
32.0 fl. oz. caramel color, acid proof.

All of the above ingredients were the same as those used in Examples I and II. To this solution were added 10.56 grams of the essential oil mixture of Examples I and II, and the soft drink flavor was stirred in a homogenizing mixer for three minutes. The essential oils were completely emulsified in the soft drink flavor.

Soft Drink Syrup

3.25 fluid ounces of the soft drink flavor containing .33 grams of the essential oils were mixed with one-half fluid ounce of phosphoric acid solution (one part phosphoric acid U.S.P. 85 per cent and 7 parts water, by volume) containing therein 1.7719 grams caffeine. A sufficient amount of a 60.0 degree Brix sugar/water syrup of Examples I and II was added to the above soft drink flavor-phosphoric acid-caffeine mixture to form one gallon of soft drink syrup.

One part by volume of the soft drink syrup was mixed with 5.5 parts by volume of carbonated water to form a soft drink.

The soft drink of Example III was identical in appearance, coloring, taste, and the like, with the soft drinks formed in accordance with the processes of Examples I and II. No oil separation was noted in either the soft drink flavor, soft drink syrup, or the soft drink of Example III after standing over a period of time.

While conventional soft drink flavor compositions, such as ginger ale flavor, root beer flavor, and the like, which contain one or more essential oils, have included at least one emulsifying agent or solubilizing agent for the oil, it has now been found, as exemplified in Example III, supra, that use of such agents can be eliminated if a sufficient amount of caramel color having an electronegative character is present in the flavor composition.

For the purpose of making edible oil emulsions, including vegetable oils, essential oils, fatty oils, and the like, the maximum amount of the oil which can be dispersed in single strength caramel color will vary with the particular oil or mixtures of oil. Thus, essential oils up to about 9 or 9.5% by weight of the final mixture may be emulsified in caramel color. Vegetable oils, including corn oil, safflower oil, olive oil, and the like, up to about 15% by weight of the final mixture may be emulsified in caramel color. Emulsions are produced by utilizing commonly employed emulsifying equipment, and such emulsions have been stable over long periods of time. While oil globules of from about 2 to 4 microns in size are produced, there is no apparent criticality in the size of the globules. The essential factor is that the globules be evenly distributed throughout the mixture. When employing double strength caramel color, it is possible to obtain emulsions which contain up to about 30% or even more of the edible oils.

It has been discovered that the agent in caramel color responsible for its emulsifying properties is the color bodies. Color bodies which were recovered from acid proof caramel color of the electronegative type, which is that used in making commercial caramel color-containing soft drinks such as root beer, ginger ale, and other straw colored or darker drinks were procured. These color bodies were substantially free of sugars or any carbohydrates, i.e., any carbohydrate present is in a trace amount of not more than .1% by weight.

The following examples will merely serve to illustrate that the emulsification of the edible oils is the function of the color bodies which are present in caramel color.

EXAMPLE IV

The aforesaid caramel color bodies were dissolved in water to provide a solution containing 11.1% by weight color bodies. The pH of the solution was brought to 2.7 by the addition thereto of phosphoric acid. To 92.5% by weight of this solution was added 7.5% by weight of lemon oil. Emulsification was effected by the use of a high speed mixer, and the emulsified oil remained in its dispersed state.

EXAMPLE V

An emulsion was made by first forming a solution containing 44.5% water having sufficient phosphoric acid therein to make the pH of the water 2.7, 47.0% sucrose, and 8.5% of color bodies similar to those of Example IV. To 92.5% of this solution was added 7.5% lemon oil and the resulting mixture emulsified with the use of a high-speed mixer, to give an emulsified composition containing 7.5% lemon oil, 43.475% sucrose, 41.1625% water and 7.8625% color bodies. The emulsion remained stable. The addition of the sucrose was made to simulate commercially available acid proof caramel color. The sucrose performs the function of a thickening agent, i.e., increases the viscosity of the emulsion and provides body thereto. Glycerol, propylene glycol, and other sugars, also perform the function of a thickening agent.

EXAMPLE VI

To demonstrate that none of the emulsification of the essential oil was due to the

sucrose, a 51.4% sucrose solution in phosphoric acid water at a pH of 2.7 was first made. To 92.5% by weight of this sugar solution was added 7.5% lemon oil, and the mixture was put through the same emulsification procedure as used in Examples IV and V. No emulsification occurred. Instead, a thick layer of oil separated on top of the solution.

EXAMPLE VII

To a 25.8% sucrose solution in water was added 8.14% lemon oil and the mixture was stirred with a high-speed lightning mixer in the same manner as in the Examples above. No emulsion was formed, and the lemon oil formed a separate layer on the surface of the aqueous solution.

To further prove the efficacy of the color bodies occurring in acid proof caramel color of the electronegative type, emulsions have been made wherein the amount of the color bodies in the caramel was "double strength," i.e., wherein the color strength was approximately double that of "single strength" caramel color. Mixtures of 70% by weight of such "double strength" caramel color and 30% by weight of essential oils in a soft drink flavor base or 30% by weight of lemon oil, alone, were readily emulsified, and the emulsions were stable.

By utilizing the teaching of the present invention, whereby caramel color bodies are used as the emulsifying agent for mixtures of essential oils used in making soft drink syrups, it is possible to prepare a soft drink which is substantially completely free of calories. This is due to the substantial absence of sugars and carbohydrates which are present in trace amounts only in the color bodies obtained from caramel color.

Although the emphasis in the foregoing description of the present invention has been placed on the particular usefulness of the caramel color bodies for the purpose of emulsifying essential oils used in preparing soft drink syrups, it is to be understood that the caramel color bodies of electronegative character can be employed for the emulsification of various edible oils including essential and vegetable oils as well as other fatty oils which are compatible with the caramel color. Thus, the methods of the present invention are useful for preparing stable emulsions and dispersions which can be used with ease for incorporation into various foods and drinks, both alcoholic and nonalcoholic, syrups of all kinds, candies, condiments, cake mixes, pie fillings, sauces.

A large number of vegetable oils have been emulsified by "single" and "double" strength caramel color. When single strength caramel color was utilized, up to 15% by weight of oil in the final mixture was completely emulsified, the amount depending upon the oil used. Employing double strength caramel color, vegetable oils in amounts of 30% and more were satisfactorily emulsified. Emulsions of vegetable oils with caramel color are useful in the preparation of foods where it is essential that the oils be completely and uniformly dispersed throughout the foods and where such uniformity of dispersion could not be obtained by addition of the vegetable oils, per se. In those foods where caramel color would normally be used as an ingredient, it is now possible to combine the caramel color with the vegetable oil or oils and completely obviate the need for added emulsifying agents for the oils. In other words, it is possible to completely eliminate the added emulsifying agents for the oil or oils, together with the function of such agents, but still achieve emulsification by using an ingredient which would ordinarily be present in the food, but whose emulsifying properties with respect to edible oils have never been recognized.

To demonstrate the efficacy of caramel color in emulsifying essential oils wherein the resulting emulsion is used in the manufacture of liqueurs, brandies, cake mixes, and the like, a mixture of 7-1/2% by weight of Oil Brandy Flavor Imitation and 92-1/2% by weight of single strength caramel color was emulsified in a high-speed mixer. To a 50% alcohol in water solution was added the emulsion at the rate of .621 gram to 100 cc solution. This corresponds approximately with the supplier's directions for use of the imitation brandy flavor, or at the rate of three-quarters avoirdupois ounce to 100 lbs. of final product. The brandy was good.

Another emulsion was prepared by mixing 7-1/2% by weight oil cake flavor (Napfkuchen) with 92-1/2% by weight single strength caramel color. The emulsion was added to water at the rate of .621 gram per 100 cc of water, which corresponds approximately to the manufacturer's directions for use in preparation of fruit cake, or about 3/4 oz. av. flavor per 100 pounds of cake filling. The resulting flavor mixture is used for the preparation of fruit cake.

In making the dispersions and emulsions according to the methods of the present invention, any of the commonly employed emulsifying equipment such as homogenizers, Lightning mixers, and the like, can be utilized. The homogenization that takes place in the emulsification step results in dispersing the oil globules throughout the aqueous solution of caramel color in a size such that the individual particles will remain suspended so as to form a stable emulsion. Generally, the size of the oil globules can vary considerably, although a range of 2 to 4 microns in diameter is common.

In using the broad term "edible oil" in this disclosure, it is meant to include within its scope the essential oils, vegetable oils, fatty

oils, and the like oils which are used in foods and beverages for human consumption. A large number of edible oils, including essential oils, are disclosed in the publication "Food Flavorings" by Joseph Merory, The Avi Publishing Company, Inc., 1960.

Soft drinks, as the term is used in this disclosure, are also known as sodas or soda waters in the trade, and are nonalcoholic carbonated beverages. Proposed definitions and standards for these nonalcoholic carbonated beverages were set forth in the September 14, 1963 issue of the Federal Register by the Food and Drug Administration, and referred to as Part 31, which included Sections 31.1 and 31.10. These definitions as well as those in Chapter 17 entitled "Syrups and Soda Flavorings" of the above Merory publication.

WHAT I CLAIM IS:—

1. An emulsified composition, characterized by the fact that it consists essentially of at least one edible oil and a sufficient amount of caramel color to maintain said oil in a stable, emulsified form.

2. A composition according to claim 1, characterized by the fact that said edible oil is an essential oil.

3. A composition according to claim 1, characterized by the fact that said oil is a vegetable oil.

4. A composition according to claim 1, 2 or 3, characterized by the fact that said edible oil is present in an amount of up to substantially 30% by weight of the emulsified composition.

5. A composition according to any one of the preceding claims, characterized by the fact that said caramel color contains from substantially 7 to 13% by weight of color bodies.

6. A composition according to any one of the preceding claims, characterized by the fact that the composition is contained in a soft drink base, flavor, syrup or final beverage and said caramel color is electronegative.

7. A process for preparing an emulsified edible oil composition, characterized by mixing at least one edible oil and a sufficient amount of caramel color for a period of time sufficient for emulsification to take place.

8. A process according to claim 7, characterized by the fact that said edible oil is an essential oil.

9. A process according to claim 7, characterized by the fact that said edible oil is a vegetable oil.

10. A process according to any one of claims 7 to 9, characterized by the fact that said edible oil is present in an amount of up to substantially 30% by weight of the emulsified composition.

11. A process according to any one of claims 7 to 10, characterized by the fact that said caramel color contains from substantially 7 to 13% by weight of color bodies.

12. A process according to any one of claims 7 to 11, characterized by the fact that said emulsified edible oil composition is incorporated in a soft drink base, flavor, syrup or final beverage and said caramel colour is electronegative.

13. A process for preparing an emulsified edible oil composition substantially as hereinbefore described with reference to Examples II to V.

14. An emulsified edible oil composition whenever prepared by the process substantially as hereinbefore described with reference to Examples II to V.

15. In the process for preparing foods and drinks, including alcoholic and non-alcoholic beverages, syrups, candies, condiments, cake mixes, pie fillings and sauces, which employs an emulsified edible oil the improvement characterized by using an emulsified edible oil produced by mixing at least one such edible oil and a sufficient amount of caramel color for a period of time sufficient for emulsification to take place, and then incorporating said emulsified composition into the food and drink.

16. An aqueous emulsified composition, characterized by the fact that it consists essentially of at least one edible oil and a sufficient amount of electronegative caramel color bodies to maintain said oil in a stable, emulsified form.

17. A process for preparing an emulsified edible oil composition, characterized by mixing at least one edible oil and a sufficient amount of electronegative caramel color bodies for a period of time sufficient for emulsification to take place.

STEVENS, LANGNER, PARRY
& ROLLINSON
Chartered Patent Agents.
Agents for the Applicants.

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